

**Remarks**

Claim 16 has been amended, and claims 19 and 20 have been added. Claims 1-4, 6-17, 19 and 20 remain pending in the application. Reexamination and reconsideration of the claims, in view of the discussion below, are respectfully requested.

Claims 1-4, 6-7, 10-12 and 14-17 were again rejected under 35 U.S.C. 103(a) as being unpatentable over Golick et al. (EP 0028487).

In response to Applicant's arguments in the response dated November 14, 2007, the examiner stated only, with respect to the argument that Golick does not disclose a method for measuring a thickness of a chromium-depleted zone from a steel member, that "a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art [and, if] the prior art structure is capable of performing the intended use, the it meets the claim."

However, as regards the method claims, the Examiner's reasoning for rejecting Applicant's arguments does not appear to apply. As claims 1 and 6 relate to a method and not an apparatus, this line of argument cannot be applied to these claims.

Claim 1 relates to a method of monitoring the condition and/or operation of a furnace comprising measuring the subsurface chromium depletion from a steel member. Claim 6 relates to a method of determining the thickness of a chromium depleted zone of a surface region of a steel member. Therefore, both of these claims relate to measuring subsurface chromium depletion from a steel member.

While Golick may arguably disclose a probe capable of measuring subsurface chromium depletion, this citation does not provide any motivation for one skilled in the art to use the probe in this manner. Instead, Golick is concerned only with measuring the thickness of a coating on a substrate. There is no teaching within Golick that the probe could also be used to monitor changes in the composition of a steel member. Furthermore, on page 13 of Golick it is stated that the probe can be used to measure nickel coatings even when the nickel coating has an over plate "for example, of gold, rhodium or chromium". Therefore, in this

reference chromium is treated as an inconvenience rather than something worthy of measurement in its own right.

Consequently, while the probe of Golick potentially “could” be used to measure subsurface chromium, there is no teaching within this document that it “would” or “should” be so used. Thus claims 1 and 6 cannot be said to be obvious over Golick.

Furthermore, in relation to claim 1, Golick provides no suggestion that measuring the thickness of a chromium layer within a furnace would be of any benefit. As discussed in the present application on page 4, line 29 to page 5, line 4, chromium depletion within the furnace pipes does not itself present a particular problem. However, the inventors of the present invention have recognized that the chromium depleted layer provides useful data about the condition and operation of the furnace due to its relationship to the production of the chromium oxide layer. This recognition of the benefits of monitoring the chromium depleted layer are not disclosed or suggested in Golick or any other cited prior art. Therefore, it is respectfully asserted that the Examiner has not provided a convincing obviousness argument against these claims.

With regard to claim 16, it has been amended to specify that the magnetic field source is positioned at an angle of between 30 degrees and 60 degrees with respect to the means for measuring magnetic flux density. This is supported by the specification at page 9, line 15 through page 10, line 5. This amendment provides a clear physical distinction over the probe disclosed in Golick, which comprises a magnet having its north and south poles disposed on a line parallel to the longitudinal axis of the housing. In use, this housing is positioned such that probe head 44 abuts the sample and precision ball 80 is positioned on the probe head to prevent any tilting of the head with respect to the surface of the coating. Therefore, the probe of Golick is arranged such that the axis of the magnet is positioned perpendicular to the surface of the sample during use. As the examiner has found claim 8 to be allowable over Golick, it is submitted that incorporating these features into claim 16 should overcome the rejection of claim 16.

The remaining claims are all dependent claims and should be allowable based on the allowability of independent claims 1, 6 and 16.

Therefore, Applicants respectfully traverse that Golick et al. makes obvious the invention of the present application. It is respectfully submitted that this basis of rejection be withdrawn and that the claims of the application be allowed.

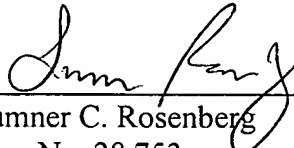
Applicants appreciate the examiner's indication that claims 8, 9 and 13 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, based on the discussion above, Applicants believe the suggestion is unnecessary.

In view of the present amendments to the claims and the remarks herein, Applicants respectfully submit that claims 1-4, 6-17, 19 and 20 are allowable, and Applicants request that the examiner pass these claims to issuance at an early date.

No fees are believed due. If, however, the Commissioner believes any additional fees are due, the Commissioner is hereby authorized to charge any such fee deficiency, or credit any fee overpayment, to Deposit Account No. 14-0629.

Respectfully submitted,


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April 9, 2008  
Date